

Prior Art

10

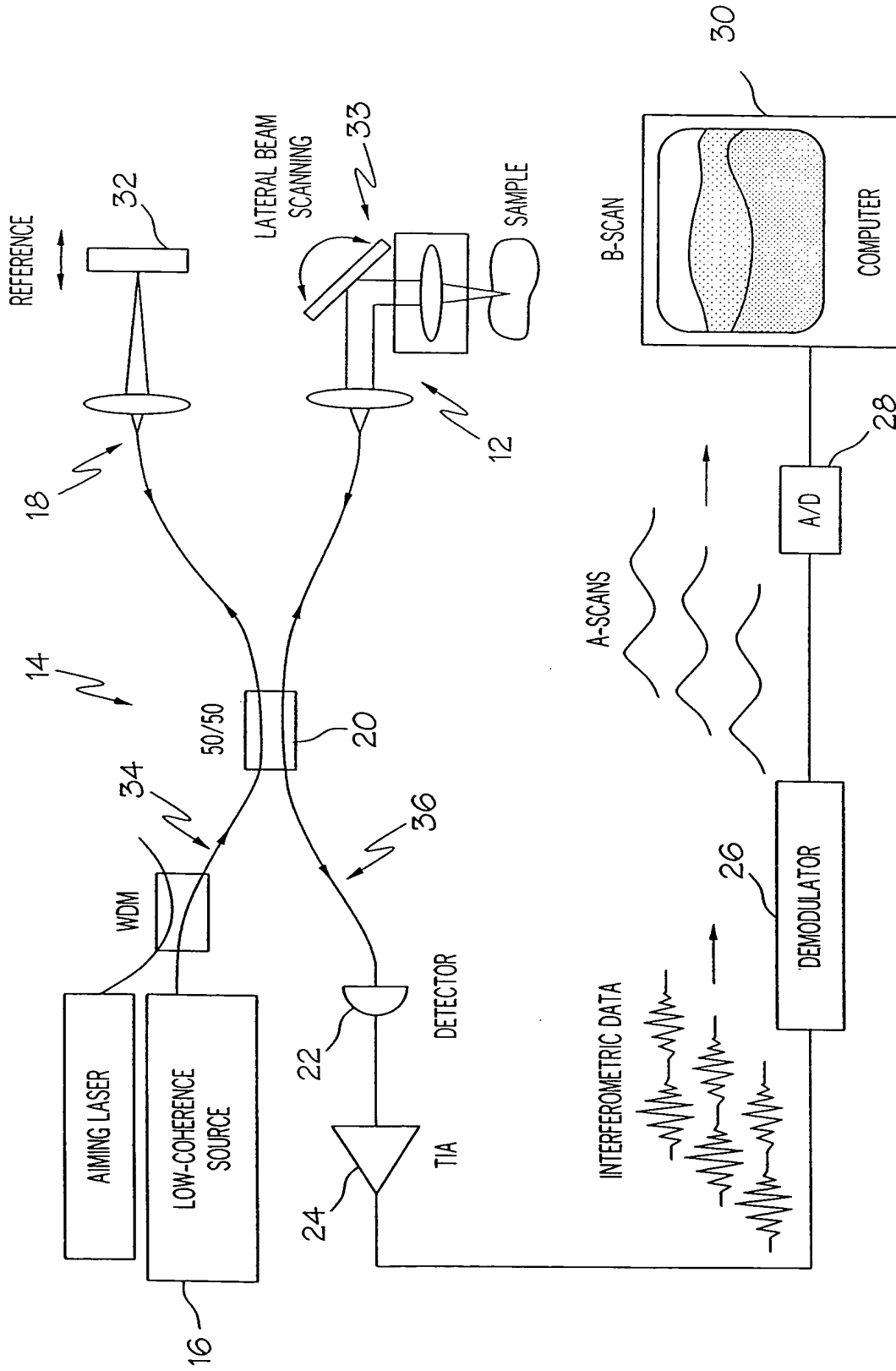
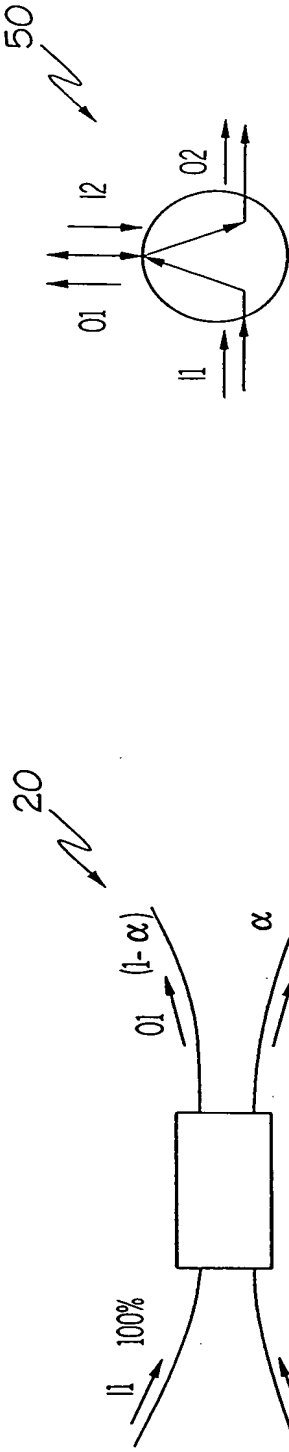


FIG. 1



BEAMSPLITTER/FIBER COUPLER

FIG. 2

Prior Art

OPTICAL CIRCULATOR

FIG. 3

Prior Art

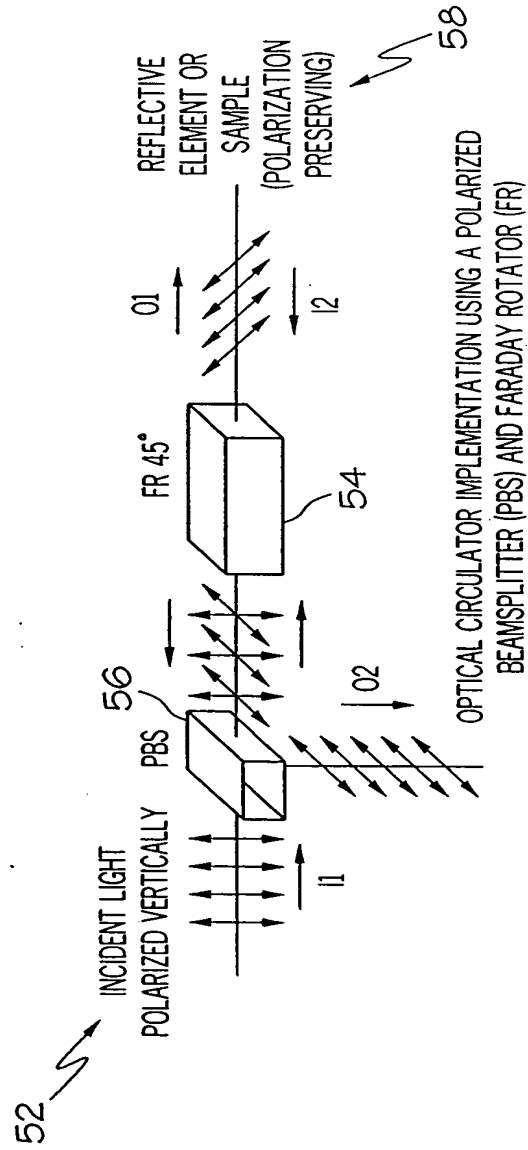
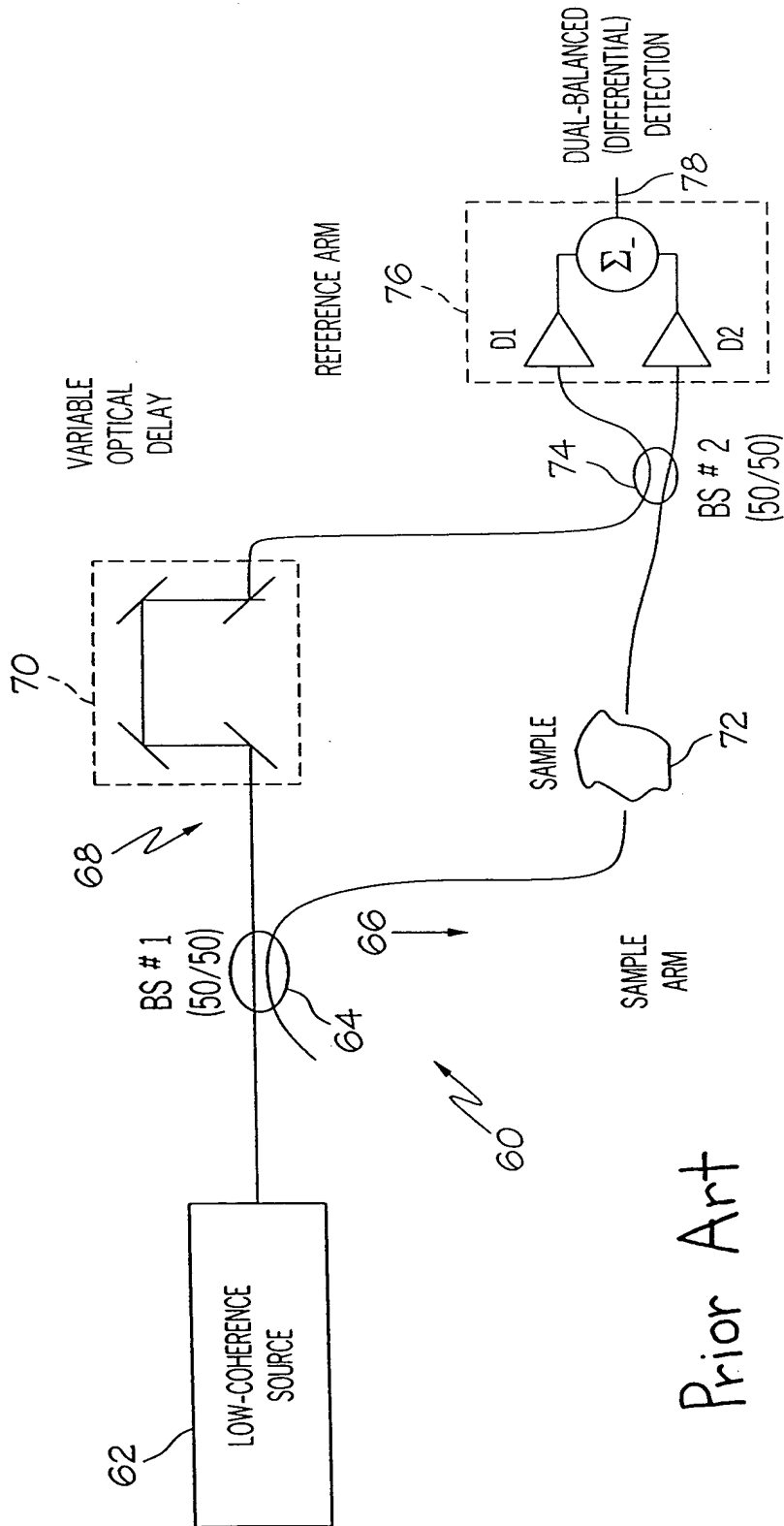


FIG. 4

Prior Art



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MACH-ZENDER (TRANSMISSIVE) OCDR/OCT

FIG. 5

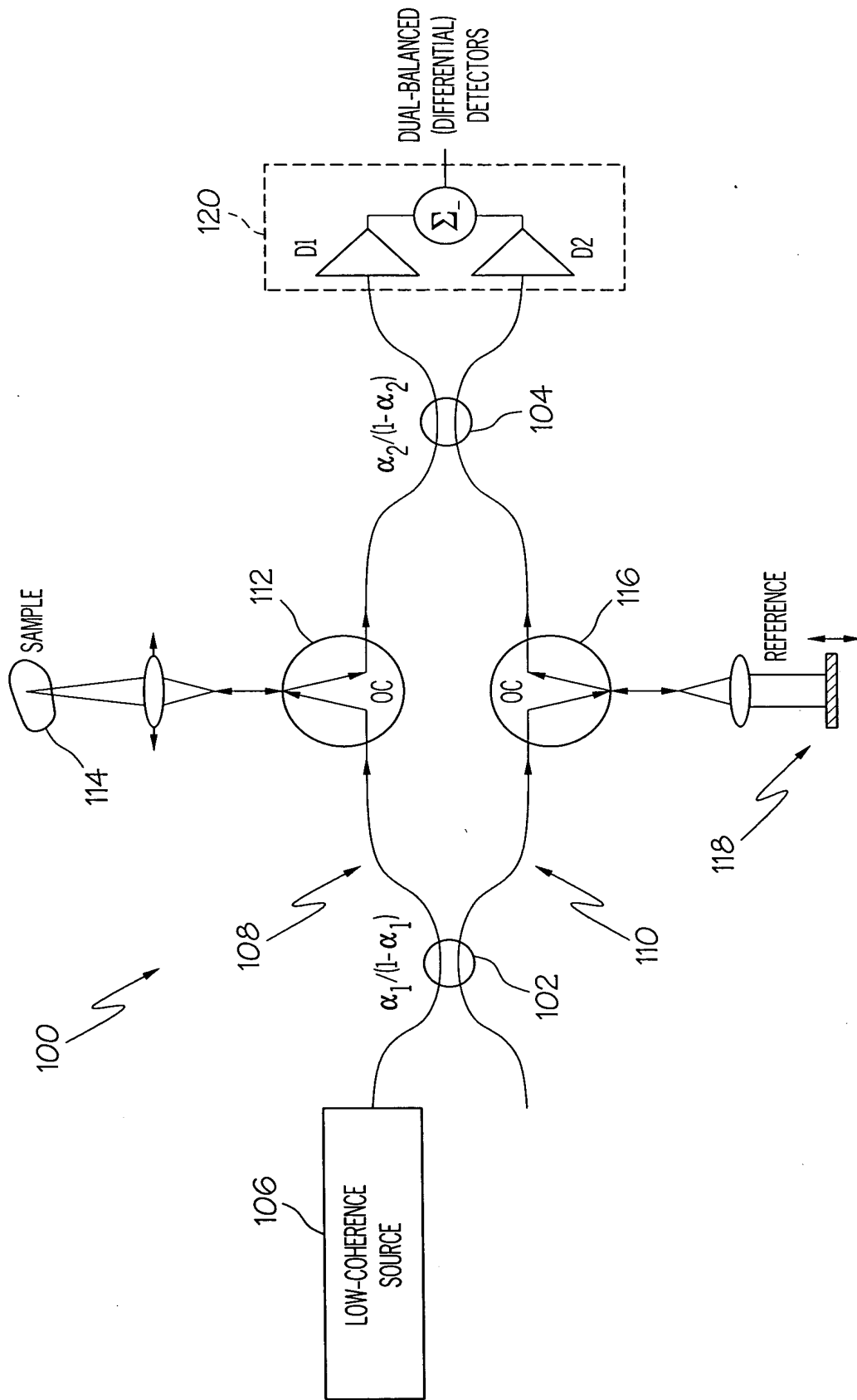


FIG. 6



FIG. 7

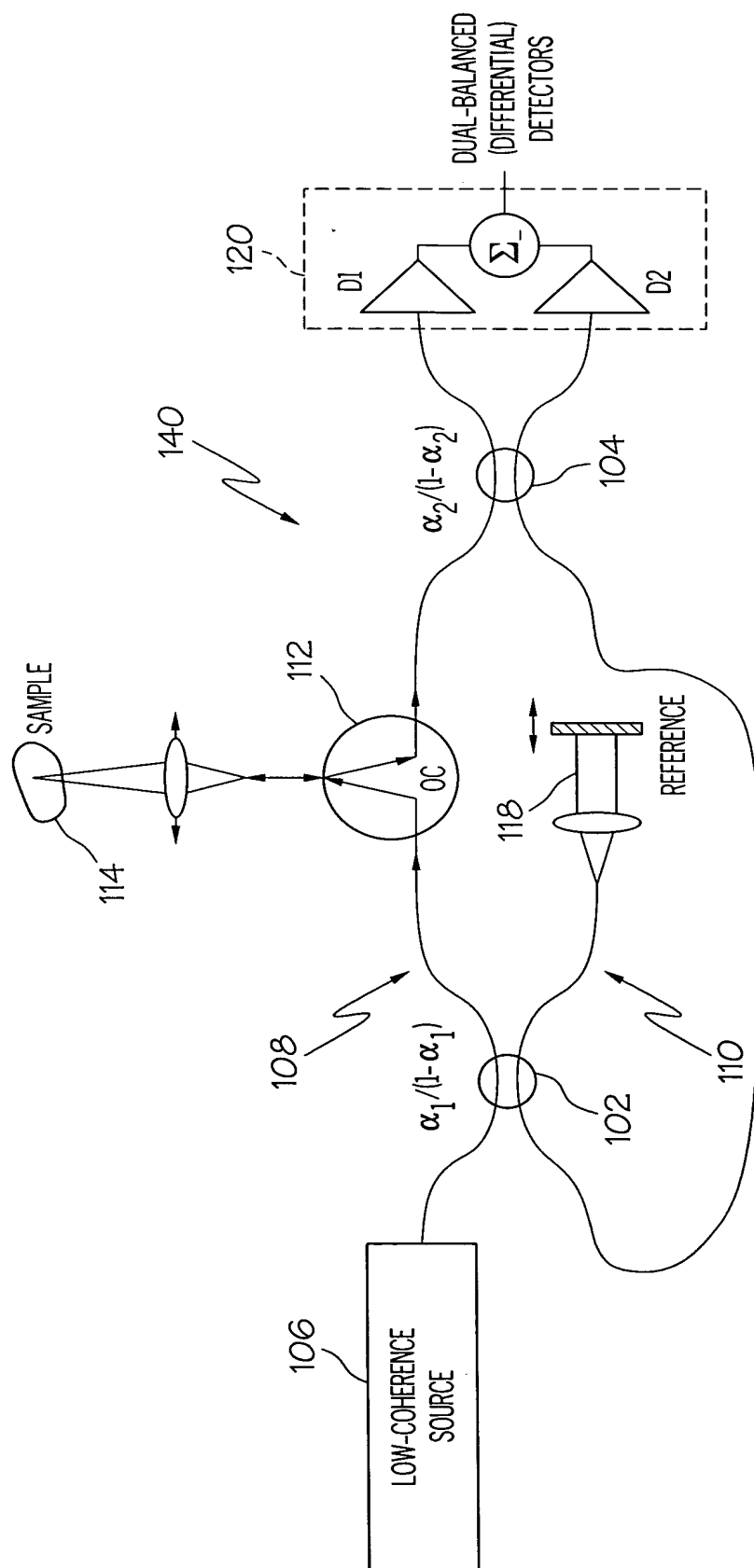


FIG. 8

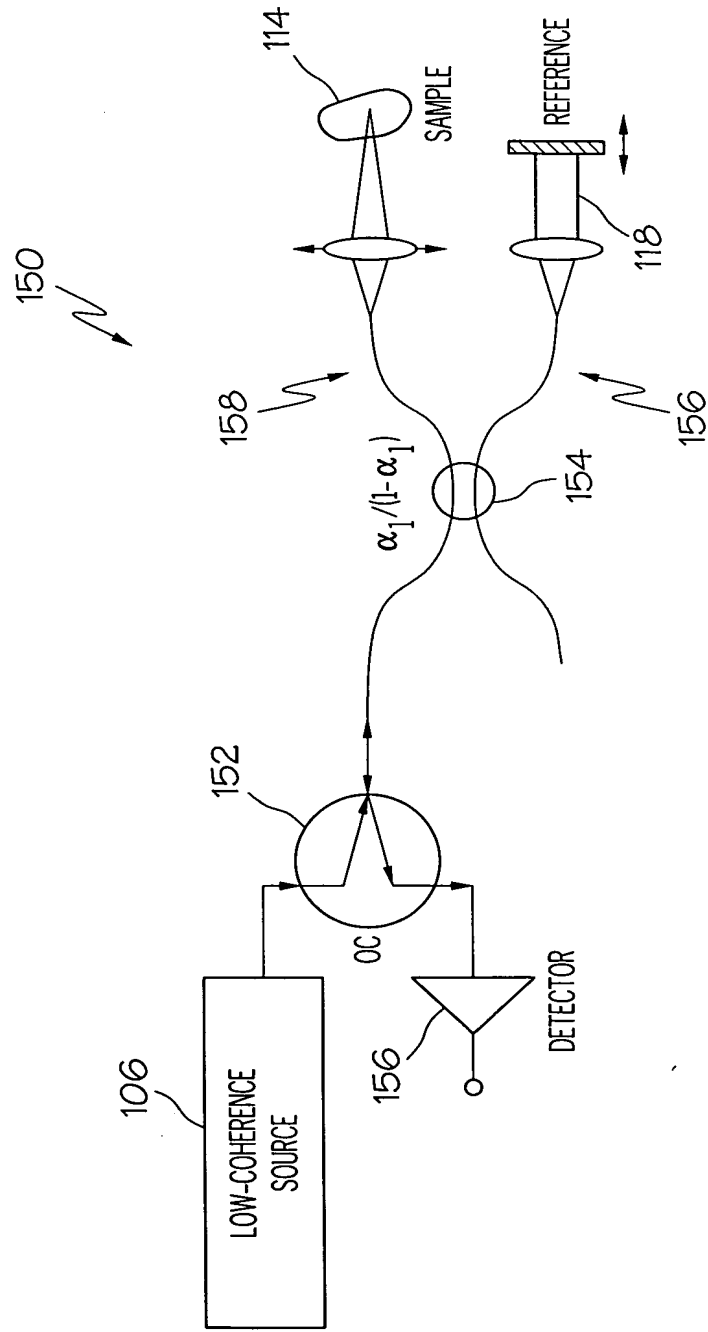


FIG. 9

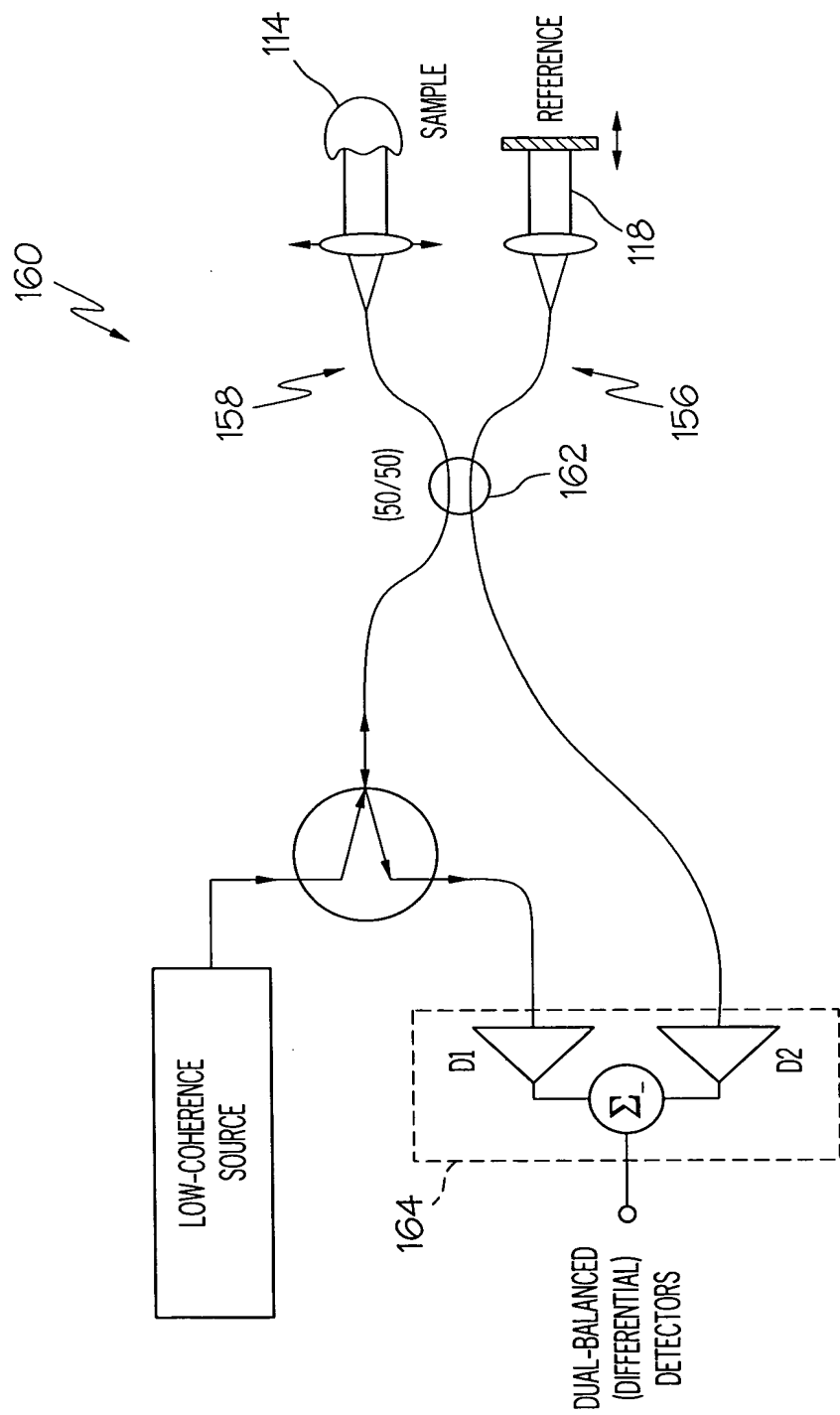


FIG. 10

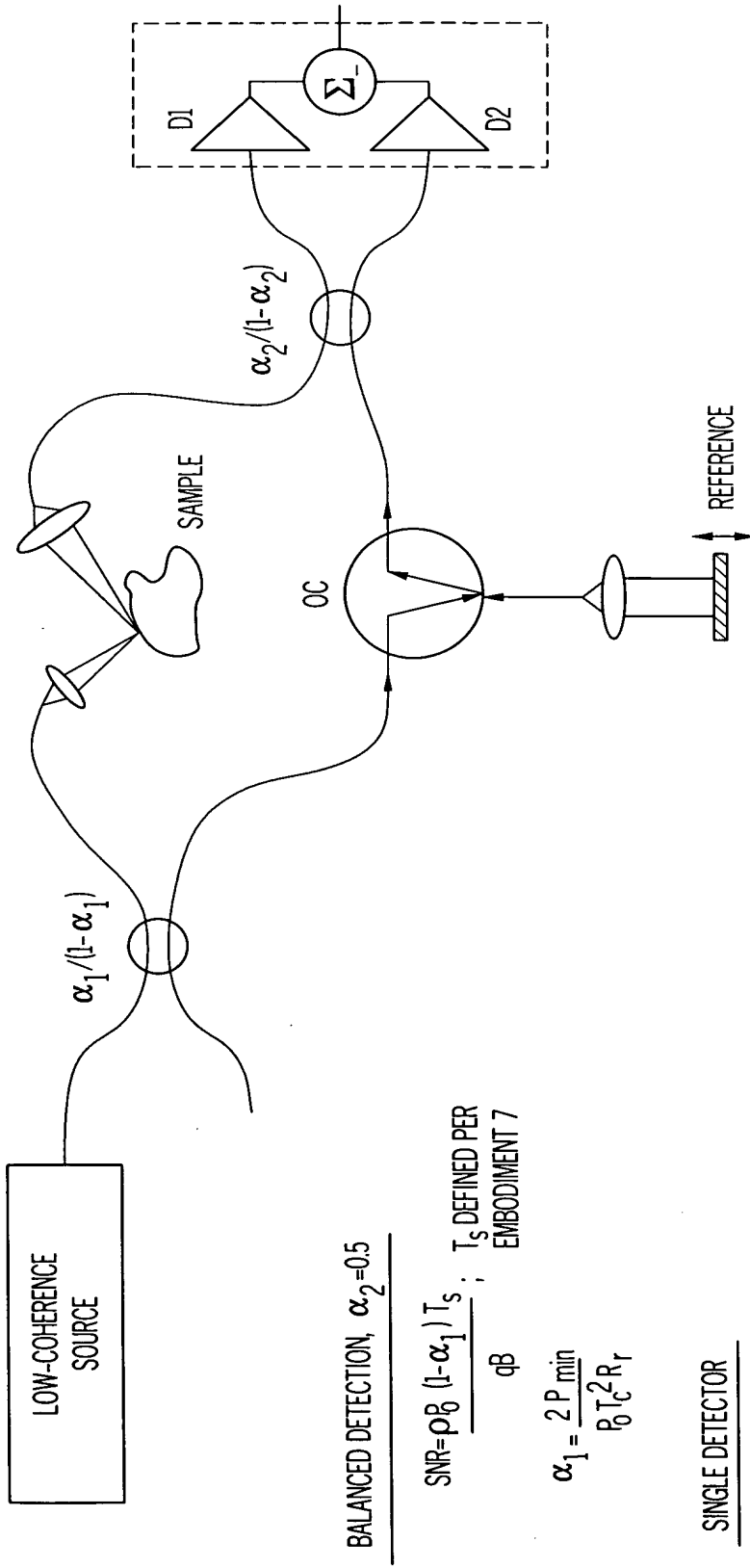


FIG. 11
(EMBODIMENT 6)

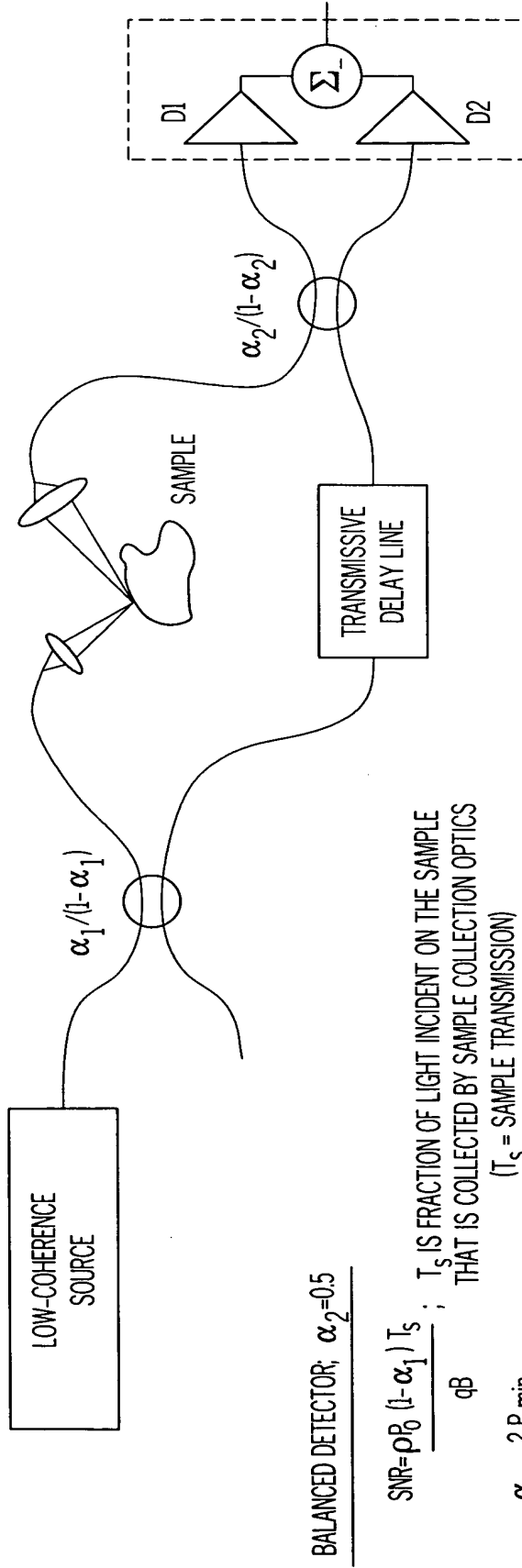
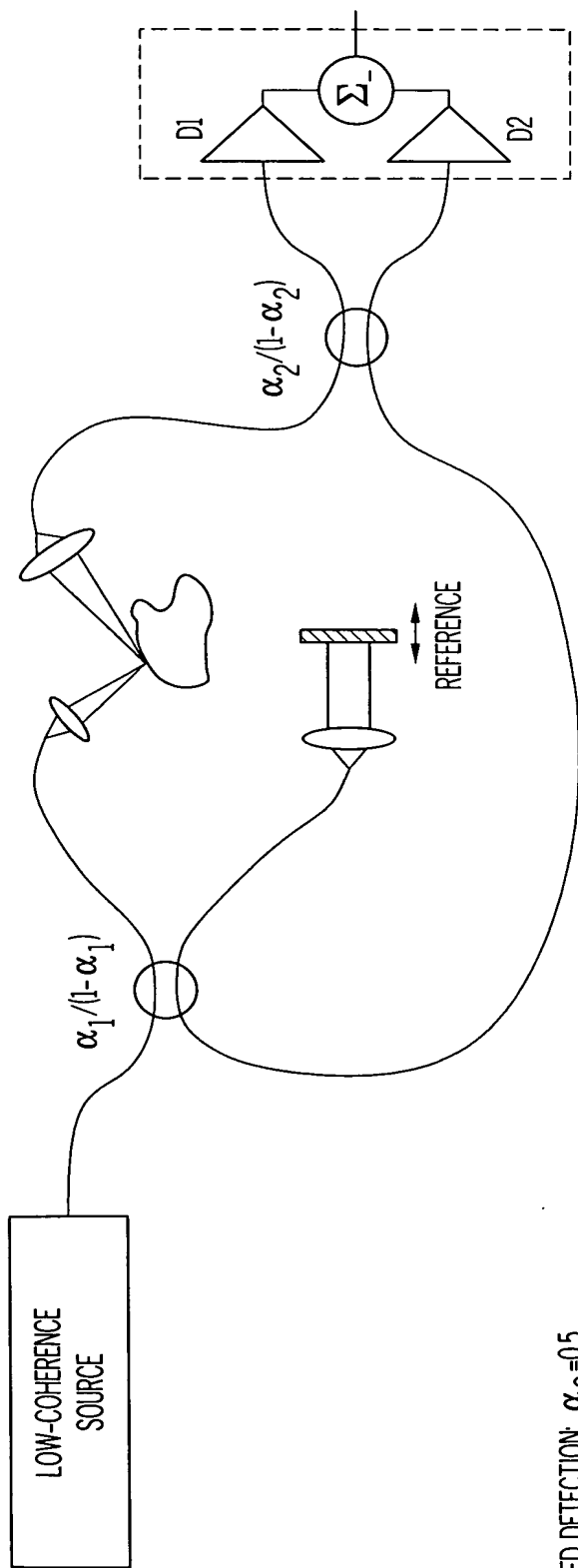


FIG. 12
(EMBODIMENT 7)



BALANCED DETECTION; $\alpha_2=0.5$

$$\text{SNR} = \frac{\rho_0 (1-\alpha_1) I_s}{qB}, \quad \alpha_1 \approx \frac{2 P_{\min}}{P_0 R_f}, \quad \text{ASSUMING SMALL } \alpha_1$$

SINGLE DETECTOR

$$\text{SNR} = \frac{\rho_0 (1-\alpha_1)(1-\alpha_2) I_s}{qB}, \quad \alpha_1(1-\alpha_1)\alpha_2 = \frac{P_{\min}}{P_0 R_f}$$

$$\text{ASSUME } \alpha_1 = \alpha_2, \quad \alpha_1 = \alpha_2 = \sqrt{\frac{2 P_{\min}}{P_0 R_f}}, \quad \text{ASSUMING SMALL } \alpha_1 \text{ AND } \alpha_2$$

FIG. 13
(EMBODIMENT 8)